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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,875	12/31/2001	James A. Hunter	8229-017-27 CIP	4295

7590 06/29/2004

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EXAMINER	
AMARI, ALESSANDRO V	
ART UNIT	**PAPER NUMBER**
2872	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/029,875	HUNTER ET AL.	
	Examiner	Art Unit	
	Alessandro V. Amari	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the c rrespondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1 and 2 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4 and 5 of copending Application No. 10/050994. Although the conflicting claims are not identical, they are not patentably distinct from each other because it is obvious that the charges are trapped in at least the surface of the dielectric layer and the ribbons would exhibit the same level of reflectivity given that they are made of the same materials.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

37 C.F.R. 1.608 (b) Declaration

3. The declaration filed on 22 January 2004 under 37 CFR 1.131 has been considered but is ineffective to overcome the Hawkins US Patent 6,233,087 reference.

4. The evidence submitted is insufficient to establish a conception of the invention prior to the effective date of the Hawkins reference. While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See *Mergenthaler v. Scudder*, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897). The evidence submitted by the Applicants in the declaration and exhibits A - E does not establish the facts necessary to show that the Applicants had completed the invention prior to the December 18, 1998 for the following reasons:

(a) Exhibit A is cited as providing a summary of the invention. However, the summary only provides a description of a grating light valve style device and mask steps and process in the manufacture of the device. There is no description of a dielectric layer being formed on a substrate or of a conductive trace formed on the dielectric layer so as to allow charges trapped in the dielectric layer to escape as recited in claim 1 of the instant application.

(b) Exhibit B is cited as providing the necessary steps needed to prepare the device as shown in copies of an invention notebook. Insofar as the examiner is able to interpret the notebook pages given the poor quality of the reproduction, Exhibit B seems to show various steps and cross sectional layers of a device including a vague reference to a "charge pit" on page 31. However, it is unclear how or where the Exhibit shows the combination of a dielectric layer being formed on a substrate and of a conductive trace formed on the dielectric layer so

as to allow charges trapped in the dielectric layer to escape as recited in claim 1 of the instant application.

(c) Exhibit C is cited as showing a cross sectional representation of the device including the contact trace. Exhibit C does seem to show a dielectric layer (SiN) with a thin Al layer formed on top of the dielectric layer but it is unclear whether this is the claimed conductive trace and how this allows charges in the dielectric layer to escape. Furthermore, it is unclear whether this is part of a reflective light processing element since the representations do not show a plurality of ribbons formed above the substrate and the conductive trace as recited in claim 1 of the instant application.

(d) Exhibit D is cited as showing the etching process necessary in order to provide a conductive trace on the dielectric layer. While the sketches show some sort of etching process and "ribbon photo and etch" and a dielectric layer (SiN) being formed as part of a multilayer structure, the Examiner can find no evidence or indication in the sketches of a conductive trace or that it is formed on the dielectric layer as recited in claim 1 of the instant application.

(e) Exhibit E is cited as showing schematics of a grating light valve with a conductive trace connection that runs through the dielectric layer. The Applicants assert that the schematics show a substrate, two sets of ribbons and gaps in-between with the physical structure reflected in the third schematic wherein the conductive trace goes from substrate contact to ribbon port. While the schematics provided show a plan view of a grating light valve with a plurality

of ribbons and gaps in-between, and a reference to a conductive trace, none of the schematics show the combination of the structure recited, namely, that of a dielectric layer being formed on a substrate and of a conductive trace formed on the dielectric layer so as to allow charges trapped in the dielectric layer to escape as recited in claim 1 of the instant application.

5. The evidence submitted is insufficient to establish a reduction to practice of the invention in this country or a NAFTA or WTO member country prior to the effective date of the Hawkins reference.

In order to show prior invention, the Applicants must provide facts sufficient to show reduction to practice prior to the effective date of the Hawkins reference. In order to show actual reduction to practice, the invention must have been sufficiently tested to demonstrate that it will work for its intended purpose. See MPEP § 2138.05. None of the exhibits provided in the declaration provide any test results to show that the device will work for its intended purpose.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1-5 and 7 stand rejected under 35 U.S.C. 102(e) as being anticipated by Hawkins et al US Patent 6,233,087.

In regard to claim 1, Hawkins et al disclose (see Figures 1 and 2) a reflective light processing element, comprising a substrate (52); a dielectric layer (58) formed on the substrate; a conductive trace (60, 62, 64) formed on the dielectric layer, the conductive trace allowing charges trapped in the dielectric layer to escape as described in column 5, lines 41-60 and column 6, lines 15-50; and a plurality of ribbons (72a, 72b) formed above the substrate and the conductive trace as shown in Figure 2.

In regard to claim 2, Hawkins et al disclose (see Figures 1, 2 and 6) a high contrast grating light valve comprising a silicon substrate as described in column 4, lines 63-65; a protective dielectric layer (58) formed on the substrate; a first set of ribbons (72a) each with a first average width Wa and a second set of ribbons (72b) each with a second average width Wb, wherein the ribbons of the first set alternate between the ribbons of the second set and one of said first and second set of ribbons is configured to constructively and destructively interfere with an incident light source having a wavelength X; wherein said substrate comprises a silicon wafer protected by a dielectric layer as shown in Figures 1 and 2; and a conductive trace (60, 62, 64) formed at least partly on the protective layer and in electrical contact with said substrate, allowing

charges trapped in the protective layer to escape as described in column 5, lines 41-60 and column 6, lines 15-50.

Regarding claim 3, Hawkins et al disclose that said dielectric layer comprises silicon dioxide as described in column 7, lines 50-60.

Regarding claim 4, Hawkins et al disclose that said conductive trace is comprised of aluminum as described in column 6, lines 8-10.

Regarding claim 5, Hawkins et al disclose that the width $W_a >= W_b$ as shown in Figures 1 and 2.

Regarding claim 7, Hawkins et al disclose that the reflective surfaces comprise aluminum as described in column 8, lines 30-33.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claim 6 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Hawkins et al U.S. Patent 6,233,087 in view of Bloom et al U.S. Patent 5,311,360.

Regarding claim 6, Hawkins et al teaches the invention as set forth above that the top surfaces of the ribbons in said first set and the top surfaces of the ribbons in said second set have reflective surfaces as described in column 8, lines 16-33 and as shown in Figures 1, 2 and 6.

However, Hawkins et al does not teach that the surface between the ribbons of the first set and second set has reflective surfaces.

Bloom et al does teach that the surface between the ribbons of the first set and second set has reflective surfaces as described in column 5, lines 53-56.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to ensure that the surface between the ribbons of the first set and second set is reflective as taught by Bloom et al for the device of Hawkins et al in order to enhance the reflectance of the surface area so as to improve the performance of the grating light valve.

Response to Arguments

10. Applicant's arguments filed 22 January 2004 have been fully considered but they are not persuasive.

The Applicants argue that the Declaration provided establishes possession of the invention by the inventors in advance of the earliest effective date of the reference and that a declaration of interference as originally request upon filing is now appropriate.

In response to this argument, the Examiner has found that the declaration filed on 22 January 2004 under 37 CFR 1.131 is ineffective to overcome the Hawkins US Patent 6,233,087 reference for the reasons cited above.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (571) 272-2306. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ava GNG
18 June 2004

DREW A. DUNN
SUPERVISORY PATENT EXAMINER

Approved.

JANICE A. FALCONE
DIRECTOR
TECHNOLOGY CENTER 2800